

PATENT SPECIFICATION

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PROVISIONAL SPECIFICATION

Improvements relating to Slicing Machines

We, BERKEL AND PARNALL'S SLICING MACHINE MANUFACTURING COMPANY LIMITED, of Aden Road, Ponders End, Middlesex, England, a British Company, do hereby declare the nature of this invention which has been communicated to us by Maatschappij van Berkel's Patent N.V., of Keileweg 5, Rotterdam, Holland, a Dutch body corporate, to be as follows:—

This invention relates to slicing machines of the type in which the substance to be sliced is cut by a circular rotary knife.

Circular slicing-machine knives have been made hitherto of steel, which during manufacture must be subjected to several heat-treatment and machining operations, including grinding, hardening, tempering and re-grinding.

The present invention comprises a circular slicing-machine knife which is coated with a hard metal forming the cutting edge.

The present invention also comprises a circular slicing-machine knife which is peripherally bevelled at one face and is peripherally coated at the other face with a hard metal forming a cutting edge into which the bevel merges.

The present invention also comprises a circular slicing-machine knife of which one face is concave and the other face is convex and bevelled to form the cutting edge and to facilitate repeated sharpening operations and which is characterised in that the concave face is peripherally coated with a hard metal into which the bevel merges.

Chromium is found to be suitable as the hard metal. Preferably the body of the knife is made of mild steel; although one

might use another common metal adapted to be coated with chromium and capable of supporting the chromium edge.

In an example, a circular mild steel body is slightly dished at one face to flattish concave form, the other face being flattish convex. The outer face, at the periphery, is bevelled to form the edge, the bevel providing a surface that can be readily ground in order to sharpen the edge. A layer of chromium is coated on the inner face at the periphery to a thickness of about .5 millimeter. This layer extends to the very periphery and there forms the edge in conjunction with the bevel.

In carrying out the invention, the mild steel body is made to the proper shape by the usual procedure, except that there is no need for special heat treatment such as hitherto necessary to harden and temper the edge. The chromium layer is deposited either electrolytically or in a molten state by use of a flame-arc welding device. The periphery is finally ground to an edge, which consists essentially of a fine hard non-corrosive blade of chromium intimately supported by a body of steel.

Thus it will be apparent that the cost of manufacturing a circular slicing-machine knife can be reduced, because the heat-treatment and machining operations can be simplified and reduced in number and the knife body can be made of a metal, namely mild steel, which is cheap to obtain and easy to work upon.

Dated this 6th day of August, 1947.

H. D. FITZPATRICK & CO.,

Chartered Patent Agents,
94, Hope Street, Glasgow, C.2, and
49, Chancery Lane, London, W.C.2.

COMPLETE SPECIFICATION

Improvements relating to Slicing Machines

We, BERKEL AND PARNALL'S SLICING MACHINE MANUFACTURING COMPANY LIMITED, of Aden Road, Ponders End, Middlesex, England, a British Company,
[Price 2/-]

Price 25p

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do hereby declare the nature of this invention which has been communicated to us by Maatschappij van Berkel's Patent N.V., of Keileweg 5, Rotterdam, Holland, a Dutch body corporate, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to slicing machines of the type in which the substance to be sliced is cut by a circular rotary knife.

Circular slicing-machine knives have been made hitherto of steel, which during manufacture must be subjected to several heat-treatment and machining operations, including grinding, hardening, tempering and re-grinding.

The present invention comprises a circular slicing-machine knife comprising a body coated with a hard metal annular blade which in itself forms the cutting edge throughout the useful life of the knife. That is to say, the annular blade forms the cutting edge not only in the knife as initially manufactured but also after sharpening again and again.

The present invention also comprises a circular slicing-machine knife comprising a body which is peripherally bevelled at one face and is peripherally coated at the other face with a hard metal blade forming a cutting edge into which the bevel merges.

The present invention also comprises a circular slicing-machine knife comprising a body of which one face is concave and the other face is convex and bevelled to facilitate repeated sharpening operations and which is characterised in that the concave face is peripherally coated with a hard metal blade into the edge of which the bevel merges.

Chromium is found to be suitable as the hard metal. Preferably the body of the knife is made of mild steel, although one might use another common metal adapted to be coated with chromium and capable of supporting the chromium blade.

The invention is illustrated by the accompanying drawing in which there is shown an example of a slicing-machine knife according to the invention. In the drawing, Fig. 1 is an elevation of the knife, Fig. 2 is a diametral section and Fig. 3 is a fragmentary section drawn to a larger scale.

In manufacture of the knife shown, a circular mild steel body 10 is slightly dished at what will be the inner face 11 to flattish concave form, the outer face 12 being flattish convex. The outer face 12, at the periphery, is bevelled at 13, the bevel providing a surface that can be

readily ground at 14 (Fig. 3) in order to sharpen the edge. A layer 15 of chromium is coated on the inner face at the periphery to a thickness of about .5 millimeter. This layer is in effect an annular blade which extends to the very periphery and there forms the edge, the ground peripheral face 14 of the bevel merging into the edge.

The usual central hole for attachment of the knife to the usual rotary knife shaft is indicated by 16.

In carrying out the invention, the mild steel body 10 is made to the proper shape by the usual procedure, except that there is no need for special heat treatment such as hitherto necessary to harden and temper the edge. The chromium layer 15 is deposited either electrolytically or in a molten state by use of a flame-arc welding device. The periphery is finally ground at 14 (Fig. 3) to an edge. It will be manifest that the edged cutter consists essentially of a fine hard non-corrosive annular blade of chromium intimately supported by a body of steel.

Thus it will be apparent that the cost of manufacturing a circular slicing-machine knife can be reduced, because the heat-treatment and machining operations can be simplified and reduced in number and the knife body can be made of a metal, namely mild steel, which is cheap to obtain and easy to work upon.

Having now particularly described and ascertained the nature of our said invention, and in what manner the same is to be performed, we declare that what we claim is:—

1. A circular slicing-machine knife comprising a body coated with a hard metal annular blade which in itself forms the cutting edge throughout the useful life of the knife.

2. A circular slicing-machine knife comprising a body which is peripherally bevelled at one face and is peripherally coated at the other face with a hard metal blade forming a cutting edge into which the bevel merges.

3. A circular slicing-machine knife comprising a body of which one face is concave and the other face is convex and bevelled to facilitate repeated sharpening operations and which is characterised in that the concave face is peripherally coated with a hard metal blade into the edge of which the bevel merges.

4. A circular slicing-machine knife as claimed by any preceding claim in which the body is circular, being dished at its inner face and bevelled at the periphery of its outer face and in which a layer of hard metal is coated to form an annular blade on the inner face at the periphery.

5. A circular slicing-machine knife as claimed by claim 4 in which the layer of hard metal has a thickness of about .5 millimeter.
- 5 6. A circular slicing-machine knife as claimed by any preceding claim in which chromium is the hard metal.
7. A circular slicing-machine knife as claimed by any preceding claim in which the body of the knife is made of mild steel. 10
8. A circular slicing-machine knife substantially as hereinbefore described with reference to the accompanying drawing.
- Dated this 4th day of June, 1948.
- H. D. FITZPATRICK & CO.,
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27, Chancery Lane, London, W.C.2.

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This Drawing is a reproduction of the Original on a reduced scale

FIG. 1.

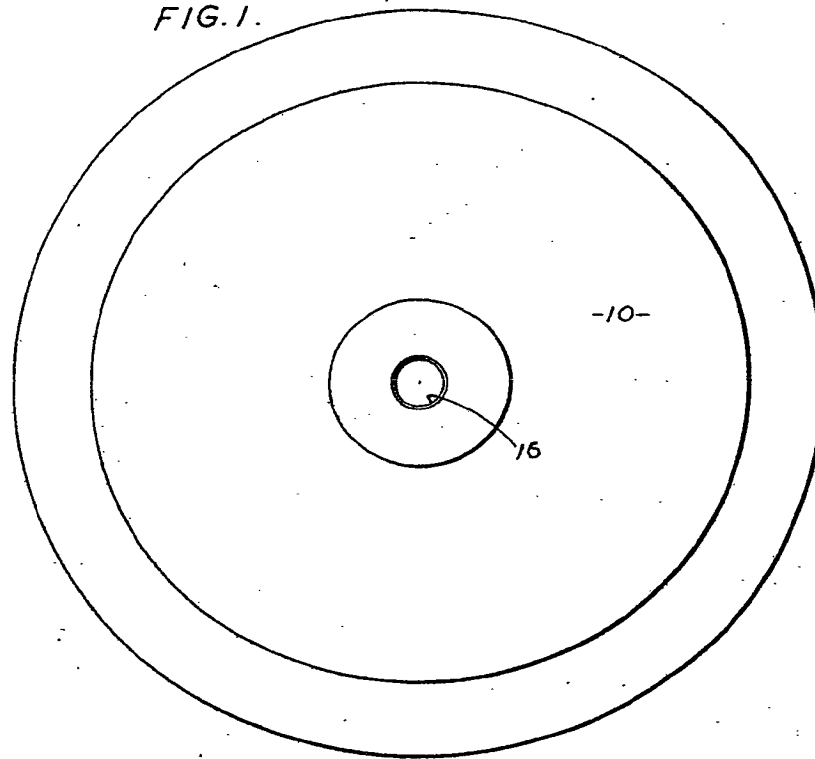
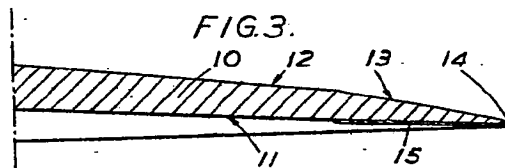


FIG. 2.



FIG. 3.



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